



Kansas Administrative Regulations
Kansas Department of Health and Environment

Notice to Reader

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Where possible KDHE will append changed regulations to the appropriate article. Once again, the lack of any attachments should not be construed as meaning there are no revisions.

Nothing contained herein should be construed as legal advice by KDHE. If you are not an attorney, you should secure competent counsel to interpret the regulations and advise you.

Office of Public Information
Kansas Department of Health & Environment

Notes

The *Kansas Register* notes the following changes:

28-42-11. (Authorized by K.S.A. 1978 Supp. 65-4815; effective May 1, 1979; revoked May 10, 1996.)

28-42-12. (Authorized by K.S.A. 65-4704, 65-4804, 65-4815, 65-4821; effective May 1, 1979; amended, E-81-7, March 12, 1980; amended May 1, 1980; amended, E-81-34, Nov. 12, 1980; amended May 1, 1981; revoked May 10, 1996.)

28-42-13. (Authorized by K.S.A. 1979 Supp. 65-4704, 65-4808, 65-4815; effective May 1, 1979; amended, E-81-7, March 12, 1980; amended May 1, 1980; revoked May 10, 1996.)

28-42-14. (Authorized by K.S.A. 1978 Supp. 65-4802; effective May 1, 1979; revoked May 10, 1996.)

28-42-15. (Authorized by K.S.A. 65-4704, 65-4820, 65-4821; effective, E-81-34, Nov. 12, 1980; effective May 1, 1981; revoked May 10, 1996.)

28-42-16. (Authorized by K.S.A. 1979 Supp. 65-4704, 65-4808, 65-4815; effective, E-81-7, March 12, 1980; effective May 1, 1980; revoked May 10, 1996.)

Article 43.—CONSTRUCTION, OPERATION, MONITORING AND ABANDONMENT OF SALT SOLUTION MINING WELLS

28-43-1. **Scope.** This article regulates the construction, operation, monitoring and abandonment of salt solution mining wells. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-2. **Definitions.** (a) "Salt solution mining well" means a well which has been drilled into subsurface saline or salt bearing deposits for the recovery of either existing brines or brines which are formed by the injection of water to dissolve said deposits.

(b) "Production casing" means the casing inside the surface casing that extends into the salt formation.

(c) "Gallery system" means a series of two or more salt solution mining wells which have been artificially connected within the salt horizon and are produced as a system with one or more wells designated for withdrawal of solutioned salt.

(d) "Division of environment" means the division of environment of the department of health and environment.

(e) "Transportation artery" means any highway, county road, township road, private road or railroad not owned by the applicant. Excluded from this definition are oil and gas pipelines. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-3. **Permits required for all solution mining wells.** The construction and use of solution mining wells for the production of brine from subsurface formations by hydraulic methods shall be prohibited unless a permit for their construction and use is first obtained from the division of environment. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-4. **Applications for solution mining well permits.** Applications for permits for solution mining wells shall be submitted in duplicate to the division of environment, on forms obtainable from the division of environment. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-5. **Construction and operation of new salt solution mining wells.** (a) Salt solution mining wells shall be located not less than three hundred (300) feet from other active or abandoned brine-supply wells or other holes or excavations penetrating the salt section, except where such wells, holes or excavations have been properly plugged, and not less than one hundred fifty (150) feet from existing surface structures, including any transportation artery. In addition, salt solution mining wells shall be located not less than one hundred fifty (150) feet from the boundary of the tract or tracts of land in, upon or under which the operator has the right to solution mine salt.

(b) New or like new oil-field type steel surface casing shall be set through all fresh-water formations and encased in cement from bottom to top by circulating cement through the bottom of the casing to the surface. A second or production string of such casing shall be set into the upper part of the salt formation and encased in cement as described above. Unless otherwise permitted by the division of environment pursuant to K.A.R. 28-43-9, such casing shall extend a minimum of

forty-five (45) feet into the salt formation to insure the existence of a salt roof having a thickness of at least forty (40) feet above the washed cavity. Centralizers are to be used and are to be spaced not more than one hundred (100) feet apart. Prior to setting and cementing the production casing, the mudcake on the bore wall shall be removed by the use of scratchers or a washing method approved by the division of environment. The cement for that part of the casing opposite the salt formation shall be prepared with salt-saturated cement.

(c) Brine shall not be produced from a well in a salt solution mining system: (1) where the salt roof is less than forty (40) feet in thickness above the washed cavity unless otherwise permitted by the division of environment pursuant to K.A.R. 28-43-9;

(2) where the solution cavity resulting from single well development exceeds three hundred (300) feet in horizontal diameter; or

(3) where the depth to the top of the salt section is less than four hundred (400) feet below land surface and the depth to the top of the cavity is shallower than three hundred (300) feet below land surface; or

(4) where the solution cavity has been developed as a part of a gallery and the dimensions of the cavity across a horizontal plane, other than the dimensions that include an adjacent cavity within the system, exceed four hundred (400) feet at any depth, or three hundred (300) feet when occurring in the upper one-third of the potential cavity height. In areas where the depth to the top of the salt section is less than four hundred (400) feet below land surface, all horizontal cavity dimensions, except the route of interconnection between wells, shall not exceed three hundred (300) feet in diameter and vertical development of the cavity shall terminate three hundred (300) feet below land surface. In addition, the outer circumference of the cavity as measured at the point of maximum circumference shall, for at least fifty (50) percent of its arc length, be separated from cavities of an adjacent well or well system by at least one hundred (100) feet. Where existing cavities do not conform with these separation requirements and where it can be demonstrated to the satisfaction of the division of environment by sonar survey or other measuring techniques that the integrity of pillars is such that surface support will be provided, the separation requirement

will be waived, if such a waiver is requested pursuant to K.A.R. 28-43-9; or

(5) where there are leaks or losses of fluid in the casing or surface pipe of a well. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-6. Operation of existing salt solution mining wells. Existing salt solution mining wells or systems that do not meet the requirements and limitations described in K.A.R. 28-43-5(c) shall be discontinued and plugged in accordance with procedures set forth in K.A.R. 28-43-8. Unless otherwise permitted by the division of environment pursuant to K.A.R. 28-43-9, such actions shall be completed within one (1) year after the effective date of these regulations.

The operator of all wells which were active or abandoned on the effective date of these regulations shall comply with procedures set forth in K.A.R. 28-43-7(d) prior to plugging. The operator shall submit proof of the thickness of the salt roof which exists. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-7. Monitoring requirements. (a) All new salt solution mining wells and salt solution mining wells that have been out of production for a period of one hundred eighty (180) days or more shall be tested prior to being put into production, or back into production to determine that there are no leaks or losses of fluid or pressure in the casing or surface pipe. Testing may be accomplished by installing a packer and pressuring the casing, by running a flag test, or by another method approved by the division of environment. The method or methods used and results of the tests shall be submitted to the division of environment, state department of health and environment, within ten (10) days of the test completion. After reviewing the test results, the division of environment may approve the use of the well, require additional tests, order modification of the well or require abandonment of the well.

(b) Records of the volume of fluids injected and withdrawn, and the injection pressures, shall be maintained on a weekly basis for each well or system. Those records shall be subject to inspection upon the request of a representative of the division of environment. A report shall be filed annually with the division of environment showing: (1) The injection—withdrawal ratio for each salt solution mining well or system; and

(2) A summary of the maximum and minimum injection pressures.

(c) Whenever an abnormal loss of fluid has occurred or the monitoring system indicates that leakage has occurred, the person in control of the premises shall immediately report the abnormal loss or leakage to the division of environment by telephone and confirm the report by letter. In counties or cities having specific local requirements for reporting inventory losses, the reporting of the loss to the division of environment by the local authority will satisfy this reporting requirement, providing that the person has reported the loss to the local authority in accordance with its requirements.

(d) When calculations based upon a model theory approved by the division of environment indicate that fifty (50) percent of the useful life of a well has been reached, the well or system shall be checked by the operator to determine the dimensions of the cavern developed by the solutioning and thereafter upon increments of each ten (10) percent of useful well life. A sonar caliper or other type of survey approved by the division of environment shall be used for this purpose. The results of the tests including logs shall be submitted to the division of environment within thirty (30) days of the test completion.

(e) The thickness of the salt roof shall be checked at the end of five (5) years of use and biennially thereafter, unless otherwise permitted by the division of environment pursuant to K.A.R. 28-43-9, by gamma ray—neutron log or other methods approved by the division of environment. A report of the method used and a copy of the survey are to be submitted to the division of environment within thirty (30) days from completion of the test. The department may require more frequent checks for roof thickness if it has reason to believe that such checks are necessary.

(f) Surface changes that result from the salt solution-mining well or system shall be monitored by establishing surface monuments in each well-field and annually determining the surface elevation of each monument. The number, location and construction of monuments required for each wellfield shall be determined by the division of environment. Upon making such determination, the division of environment shall notify the operator, by mail, of the requirements. Precise level measurements of the third order accuracy, class II, are to be made at the time the well is first operated and thereafter annually, by a licensed

professional land surveyor or professional engineer licensed to practice in Kansas, and the results reported to the division of environment. Such level measurements are to be in conformance with methods as described in the report entitled "classification, standards of accuracy, and general specifications of geodetic control surveys", prepared by the federal geodetic control committee, and dated February, 1974. Copies of said material are available on request to the Kansas department of health and environment. A fee per page, at the rate established pursuant to K.S.A. 1980 Supp. 45-204, shall be charged for the copy of this report. Certified and stamped field notes shall be submitted to show that the survey was performed in compliance with this regulation. Annual survey results shall be reported to the division of environment within thirty (30) days of completion. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-8. Abandonment and plugging procedures. A salt solution mining well which has been inactive for one year or longer shall be considered to have been abandoned and shall be plugged, unless otherwise authorized by the division of environment. The plugging of all salt solution mining wells shall be as follows: (a) The cavern in the salt shall be filled with water, brine or other substances approved by the division of environment.

(b) A plug shall be set at the base of the production casing and the casing shall be filled with cement to the ground surface. A permanent survey monument shall be established on the well casing, unless an alternate method is approved by the division of environment. If the production casing has become obstructed and the plug cannot be set at the base of the production casing, the division of environment shall be immediately notified of the condition and an alternate plugging method shall either be specified or approved by the division of environment prior to initiating any further plugging activities at the well.

(c) The plugging report with related details shall be submitted to the division of environment within 30 days of completing the plugging operation.

(d) After a well or group of wells have been plugged, a map, showing the tri-coordinate location and elevation of the remaining wellhead or the former location of each well shall be prepared

by a licensed professional land surveyor or professional engineer licensed to practice in Kansas. The map shall be submitted to the division of environment within 30 days following the completion of the plugging operation. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981; amended May 1, 1984.)

28-43-9. Waiver of specific requirements. The secretary may grant an exception to a requirement provided in these regulations, if the applicant or operator can show good cause for the granting of such an exception, and presents an alternative to the requirement which will insure that the objectives of these regulations will be achieved. Requests for an exception shall be made, in writing, to the secretary. The secretary shall grant or deny the request within fifteen (15) days of the receipt thereof and shall notify the person requesting the exception, in writing, of the decision. If the request is denied, the secretary will specify in the notice the reasons for the denial of the request. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-10. Appeals. (a) Anyone aggrieved by a decision of the secretary of the state department of health and environment that limits or prohibits the use of a salt solution mining well or wells may within ten (10) days of receipt of said decision request an administrative hearing. The request shall be in writing and shall state wherein the decision complained of is unlawful or unreasonable. Upon receipt of such request, it shall be the duty of the secretary of health and environment to fix a date for hearing. The administrative hearing will be held by the secretary or a designated hearing officer. The secretary or designated representative shall administer oaths to all the witnesses and the evidence at the hearing shall be taken under oath or affirmation and the witness shall be subject to cross-examination. On the basis of said hearing, findings of fact and conclusions of law shall be made and an order issued. The order of the secretary shall be final unless appealed to the courts within thirty (30) days after the order has been made.

(b) Any notice, order or instrument issued by or with the authority of the secretary may be made by mailing a copy of the notice, order, or other instrument by registered or certified mail directly to the person affected at his last known post-office

address as shown by the files or records of the secretary. (Authorized by K.S.A. 65-171d; implementing K.S.A. 65-171d; effective May 1, 1979; amended May 1, 1981.)

28-43-11. Salt solution mining operations; fees. An annual fee of \$1,300 for permitting, monitoring and inspecting salt solution mining operations shall be paid by each person, firm, association or corporation operating salt solution mining wells. The fee shall be paid by April 1 of each year. Any person, firm, association or corporation who fails to pay the amount due by April 1 shall be subject to permit revocation. (Authorized by and implementing K.S.A. 1984 Supp. 65-171d; effective, T-85-7, Feb. 15, 1984; effective May 1, 1984; amended May 1, 1985.)

Article 44.—PETROLEUM PRODUCTS STORAGE TANKS

28-44-1 to 28-44-10. (Authorized by and implementing K.S.A. 65-171d; effective May 1, 1981; revoked Nov. 26, 1990.)

28-44-11. (Authorized by and implementing K.S.A. 1984 Supp. 65-171d; effective, T-85-7, Feb. 15, 1984; effective May 1, 1984; amended May 1, 1985; revoked Nov. 26, 1990.)

28-44-12. General provisions. (a) Any reference in these rules and regulations to standards, procedures, or requirements of 40 CFR part 280 shall constitute a full adoption by reference of the part, subpart, and paragraph so referenced, including any notes and appendices associated therewith, unless otherwise specifically stated in these rules and regulations.

(b) When used in any provision adopted from 40 CFR part 280 inclusive, references to "the United States" shall be replaced with "the state of Kansas"; "environmental protection agency" or "implementing agency" shall be replaced with the "department"; "administrator" or "regional administrator" shall be replaced with the "secretary"; and "federal register" shall be replaced with the "Kansas register."

(c) Fees required by K.A.R. 28-44-12 through K.A.R. 28-44-27 shall be in the form of a check or money order made payable to the Kansas department of health and environment. (Authorized by and implementing K.S.A. 1989 Supp. 65-34,105; effective Nov. 26, 1990.)